Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GARY D. POWER

Appeal No. 96-0107
Application 08/026,797[1]

ON BRIEF

Before SOFOCLEOUS, HANLON and PAK, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-20, all of the claims pending in the application. Claims 1, 5 and 12 are illustrative of the subject matter on appeal and read as follows:

1. In a microchannel plate, the improvement comprising:

[1] Application for patent filed March 5, 1993.

a layer of dielectric material on the ground plane of the microchannel plate;

said layer of dielectric material being provided with openings which align with, without covering, holes in the microchannel plate.

5. In an image intensifier including a microchannel plate and a phosphor screen positioned in spaced relation with said plate, the improvement comprising:

a layer of electrically insulating material positioned adjacent a ground plane of said microchannel plate and having openings therein which align with but do not cover holes in said microchannel plate.

12. A method for improving the spatial resolution of proximity focused image intensifiers which includes a micro-channel plate and a phosphor screen spaced therefrom to form a gap therebetween, including the steps of:

positioning a layer of dielectric material intermediate the microchannel plate and the phosphor screen and adjacent to the microchannel plate; and

forming openings in the layer of dielectric material which align with but do not cover holes in the microchannel plate.

The references relied upon by the examiner are:

Warde et al. (Warde)	4,481,531	Nov. 6, 1984
Aebi et al. (Aebi)	5,268,612	Dec. 7, 1993

The following rejections are at issue in this appeal:[2]

(1) Claims 1-9 and 11 are rejected under 35 U.S.C. § 103 as being unpatentable over Aebi et al.

(2) Claim 10 is rejected under 35 U.S.C. § 103 as being unpatentable over Aebi et al. in view of Warde et al.

(3) Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

The claimed invention

The claimed invention is directed to a microchannel plate comprising a layer of dielectric material on or adjacent to the ground plane of the microchannel plate. The layer of dielectric material is provided with openings which "align with, without covering holes in the microchannel plate" (claim 1). See also claim 5 (a layer of electrically insulating material has openings which "align with but do not cover holes in said microchannel plate"); claim 12 (openings are formed in a layer of dielectric material which "align with but do not cover holes in the microchannel plate"). According to appellant, this layer of dielectric material on or adjacent to the ground plane of the

[2] Claims 12-20 were rejected under 35 U.S.C. § 101 in the final Office action dated October 28, 1994. This rejection has been withdrawn by the examiner (Answer, p.2).

microchannel plate (MCP) improves the spatial resolution of proximity focused image intensifiers.

One of the prior approaches for improving the resolution of proximity focused image intensifiers (Specification, p.2):

> [I]nvolves the use of microchannel plates wherein the ground plane thereof is located in closely spaced relation to the phosphor screen having a positive potential applied thereto. If a high voltage is applied to improve to [sic] resolution of the image intensifying device, there is a breakdown, thereby requiring such devices to operate a [sic] lower than desired voltages.

According to appellant, the spatial resolution of these devices can be improved without creating a breakdown (Specification, p.8; see also Figure 3):

> [B]y coating the ground plane of an MCP so as not to obstruct the holes in MCP, the phosphor screen can be located closer to the MCP and the voltage can be significantly increased, thus greatly improving spatial resolution [emphasis added].

Rejection under 35 U.S.C. § 112, second paragraph

Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. According to the examiner (Answer, p.4):

> In claims 1, 5, and 12, although the openings in the layer of dielectric (or electrically insulating) material align with the holes in the microchannel plate as claimed, the Examiner believes that the Appellant intended that the openings in the layer of dielectric material cover (not "do not cover") the holes in the microchannel plate. If the openings in the layer of dielectric material do not cover the holes in the microchannel plate as claimed, then what do the openings in the layer of dielectric material cover?

At the outset, we note that there is some dispute as to whether the rejection of claims 1-11 under 35 U.S.C. § 112, second paragraph, is properly an issue in this appeal. Appellant argues that (Reply, p.3):

> . . . Claims 1-11 have not been rejected under 35 USC 112, second paragraph, prior to the Examiner's Answer. If Claims 1-11 are now being rejected on this basis, then this constitutes a new grounds of rejection raised in the Examiner's Answer, and an amendment directed to the new ground of rejection is entitled to entry (MPEP 1208.03(2)).

There is no dispute that the examiner failed to include claims 1-11 in the introductory statement setting forth the rejection under 35 U.S.C. § 112, second paragraph, in the final

Office action (paragraph 3, paper no. 5). However, the comments following the introductory statement clearly explain the alleged indefiniteness of claims 1, 5 and 12. Manifestly, appellant addresses the rejection of claims 1, 5 and 12 set forth in the paragraph bridging pages 2 and 3 of the final Office action and urges that the rejection under 35 U.S.C. § 112, second paragraph, be reversed (Brief, pp.9-10). Furthermore, in an effort to resolve the indefiniteness issue, appellant proposed to amend claims 1 and 5 in at least one amendment filed under 37 CFR § 1.116 (Brief, pp.10-11; see also paper nos. 6 and 7). Appellant is exalting form over substance. Therefore, for purposes of this appeal we will consider the rejection of claims 1-20 under 35 U.S.C. § 112, second paragraph.[3]

We reverse the rejection. One of ordinary skill in the art reading claims 1, 5 and 12 would understand that the openings provided in the layer of dielectric material (1) align with and (2) do not cover or obstruct, or in other words, are coextensive with the holes in the microchannel plate. Compare In re Mattison, 509 F.2d 563, 565, 184 USPQ 484, 486 (CCPA 1975) (use

[3] The examiner properly points out that (Answer, p.7):
> [I]f the Appellant was confused with the finality of the office action mailed 10/28/94, they should have petitioned the Office that the final was premature.

An examination of the record reveals that no petition has been filed.

of "substantially increase" in the claims does not render them indefinite under 35 U.S.C. § 112, second paragraph, since the phrase does not stand in a vacuum but must be read in light of the specification, and when so read, one skilled in the art can determine the scope of the claimed invention).

To the extent that the examiner interprets the claims as reciting that the openings provided in the layer of dielectric material "cover" another element of the invention, the claims recite the additional limitation that the openings are aligned with the holes in the microchannel plate. Therefore, one of ordinary skill in the art would reasonably understand that the openings provided in the layer of dielectric material are coextensive with the holes in the microchannel plate.

Claims 12-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the additional reason that (Answer, p.4):

> . . . claim 12 recites "[A] method for improving the spatial resolution of proximity focused image intensifiers", the rest of claim 12, along with claims 13-20 recite steps for manufacturing the device. It is unclear how the steps for making the device would improve the spatial resolution of the proximity focused image.

We disagree. One of ordinary skill in the art reading

claims 12-20 would understand that performing the steps recited in these claims improves the spatial resolution of proximity focused image intensifiers. See also Specification, p.3 (the invention involves providing the ground plane of a microchannel plate with a thin layer of a dielectric without covering the holes in the plate for improving the spatial resolution of an image intensifying device); see also Brief, p.9 ("Applicant has discovered that positioning a dielectric layer with aligned holes adjacent the MCP improves resolution, and that is what is claimed . . . ."). The fact that the examiner may be of the opinion that there is more suitable language to define the claimed invention is not a proper basis for a rejection under 35 U.S.C. § 112, second paragraph. Therefore, the rejection of claims 1-20 under 35 U.S.C. § 112, second paragraph, is reversed.

Rejection under 35 U.S.C. § 103

Claims 1-9 and 11 are rejected under 35 U.S.C. § 103 as being unpatentable over Aebi. We reverse this rejection.

The invention disclosed in Aebi is directed to a microchannel plate which limits feedback of photons, ions or neutral particles from the output side of the plate (col. 6, lines 62-65; see also Figure 12).

> The added noise due to feedback effects from the screen to the MCP will be reduced proportional to the reduction in output open area of the MCP. Reduction of the output open area by less than 10% would be ineffective in producing a significant reduction in noise factor. The maximum reduction in output open area must be less than 100%, which would completely close off the channels, as some opening must remain to allow the electrons to escape the MCP. A reduction in the range from about 10% to about 85% has resulted in a useful compromise between the two extremes described above. In general, a reduction at the higher end of this range is most effective in carrying out this invention [col. 7, lines 6-19].

Appellant further points out that (Brief, p.13):

> A reading of Aebi et al establishes that the purpose of this reference <u>is directly opposite to</u> the purpose of the claimed subject matter. For example, Col. 8, lines 32-37 state: "an output electrode 126, preferably aluminum, is deposited on the output surface of the microchannel plate 116 to substantially <u>close off the open area of the channels</u> 128 formed by the channel walls 130"; and lines 54-59 of Col. 8 state that "the output channel area of the MCP <u>is reduced</u> by at least 10% and preferably <u>reduced by substantially 75 to 85 percent</u> by applying a much thicker metalization layer" (underlining added).

In contrast, appellant's claimed invention comprises a layer

of dielectric material provided with openings which align with and do not cover or obstruct the holes in the microchannel plate. Therefore, we agree with appellant that the Aebi reference teaches away from the claimed invention and fails to render the claimed invention obvious under 35 U.S.C. § 103. See Gillette Co. v. S.C. Johnson & Son, Inc., 919 F.2d 720, 724, 16 USPQ2d 1923, 1927 (Fed. Cir. 1990) (the closest prior art reference "would likely discourage the art worker from attempting the substitution suggested").

Claim 10 is rejected under 35 U.S.C. § 103 as being unpatentable over Aebi in view of Warde. Since claim 10 is dependent on claim 5, and the rejection of claim 5 has been reversed, the rejection of claim 10 is also reversed. See 37 CFR § 1.75(c) ("Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.").

The decision of the examiner is reversed.

REVERSED

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MICHAEL SOFOCLEOUS)
Administrative Patent Judge)

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